

## **REMARKS**

Claims 1-16 are pending in this Application. Claims 1, 11-13 and 15 have been amended, and claim 16 has been added, by this Amendment. Applicant notes the underlining of "d" and "w" in claims 9 and 10. These underlinings were present in the original claims 9 and 10 as filed on January 4, 2005, and do not represent amendments to the claims.

The Office Action dated August 17, 2007 objected to the drawings and specification. The Office action rejected claims 1, 2, 4-8 and 11-15 under 35 USC 102(e) as being anticipated by prior art, and rejected dependent claims 3, 9 and 10 under 35 USC 103(a) as being rendered obvious by prior art.

### **Objections to the Drawings and Specification**

The objections to the drawings and the specification are set forth in parts 2 and 3 on page 2 of the Office Action. Applicant has submitted proposed drawing corrections with this Amendment and requests the Examiner's approval thereof. Applicant has also corrected the typographical error noted on page 4 of the specification.

### **Anticipation Rejection**

The grounds for the anticipation rejection of claims 1, 2, 4-8 and 11-15 is set forth in part 5 on pages 3-6 of the Office Action. Specifically, independent claims 1 and 11 are rejected as being anticipated by the preferred embodiment shown in Fig. 20 and discussed at col. 4, lines 38-42, col. 9, lines 5-11, and col. 21, lines 15-20 of U.S. Patent No. 6,313,703 issued to Wright (this preferred embodiment hereinafter referred to simply as "Wright"). Applicant respectfully traverses the Based on figure 20 and the passages in column 4, lines 38 to 42, column 9, lines 5 to 11, and column 21, lines 15 to 20. However, Wright does not include each and every one of the combination of features recited in claims 1 and 11.

Wright includes an adaptive control processing and compensation estimator (ACPCE) 28, which controls parameters of a digital compensation signal processor (DCSP) in order to provide a compensation function (which might possibly be regarded as the pre-equalizing function indicated in claim 1).

For example, claim 1 recites obtaining a difference between an output signal of signal processing circuitry and an input signal of a pre-equalizing function and "approximating a gradient of said difference..." The approximation is based on "said obtained difference and an approximation of said transmission characteristic." Independent claims 11 and 16 recite substantially similar features. The rejection refers to column 21, lines 15-20, of the patent with respect to these features, which is in the following paragraph:

In the TRANSMISSION RAMP UP state (4), ACPCE 28 is responsible for ensuring a smooth bandlimited transition between a training sequence state and the start of the modulation signal. A process which may be used for this purpose is illustrated in FIG. 31 and described below. The ACPCE preferably ensures that during the transition the gradients of the amplitude, phase and frequency trajectories are continuous and bandlimited. This is very similar to the ordinary problem of amplifier "clicks" known to those skilled in the art since the inception of telegraphic keying, morse code. However, this effect is more pronounced in a LINC transmitter because the amplifiers are running at full power and any step or disturbance in the modulation trajectory will cause distortion power spectra to be generated. (col. 21, lines 11-24)

This paragraph relates to a so-called "TRANSMISSION RAMP UP" state in which the ACPCE 28 is responsible for ensuring a smooth bandlimited transition between a training sequence state and the start of a modulation signal. However, in this state, the compensation parameters are not updated. The compensation parameters are updated only during a so-called "TRAINING AND ACQUISITION" state (see col. 20, lines 27-56).

In the TRANSMISSION RAMP UP state, the ACPCE 28 performs a process by which the gradients of the amplitude, phase and frequency trajectories are kept continuous and bandlimited. This process is described in connection with Fig. 31 and does not comprise any approximation of a gradient of a difference between an output signal of a signal processing

circuitry and an input signal of a pre-equalizing function/pre-equalizer based on the difference and an approximation of a transmission characteristic, as recited in the independent claims.

Indeed, according to the paragraph bridging columns 41 and 42 of the Wright patent, the concerned process comprises a linear, Gaussian or other weighting function, by which a contribution of an input-based component signal is increased by a small amount, and a contribution of a training signal is decreased by an equal amount. The incremental values are selected sufficiently small to maintain wideband splatter at an acceptable level. This smoothing process ensures that the above gradients are kept continuous and bandlimited.

Furthermore, in column 20, lines 27-67, the Wright patent describes a conventional way of determining compensation parameters in the TRAINING AND ACQUISITION state. Training signals are used, wherein the training signals are in antiphase so that emissions from the transmitter's antenna are substantially inhibited during the training process. An antenna switch which disconnects the amplifier from the antenna may additionally or alternatively be used. The antenna switch separates the data path from the antenna, resulting in a complete inhibition of payload emissions from the antenna.

Thus, Wright has a training sequence and an antenna switch rather than the features of the rejected claims. Payload data in Wright is used to calculate a training sequence rather than the approximated gradient. Thus, the payload data transmission is interrupted in Wright, and there is a physical cut off in the data path by an antenna switch in Wright. Wright thus relies upon the conventional use of training signals and an antenna switch, and is mutually exclusive of the features recited in amended independent claims 1, 11 and 16.

### **Obviousness Rejection**

The grounds for the obviousness rejection of claims 3, 9 and 10 is set forth in part 7 on pages 6-9 of the Office Action. Specifically, the claims are rejected as being obvious Wright in view of an additional document entitled "Joint Gradient-Based Time Delay Estimation and Adaptive Filtering", by Daniel Boudreau et al. Applicant respectfully traverses the rejection at

least because it does not establish a prima facie case that the applied references suggest a method having each and every one of the combination of features recited in claims 3, 9 and 10.

Dependent claim 3 additionally requires that the gradient vector is calculated "from a partial differential equation of a system cost function" and claims 9 and 10 additionally require that the gradient vector is calculated using a specified equation (not repeated here for brevity). The rejection acknowledges that Wright does not include either one of these features, but apparently asserts that it would have been obvious to modify Wright to include equations 20, 24-26, 38-39 and 43 from the Boudreau reference. However, the rejection does not make clear whether the Boudreau reference is asserted to make a teaching or suggestion of the proposed modification of Wright, or whether there is some other rationale for the proposed modification of Wright. Thus, the rejection fails to establish a prima facie case of obviousness.

Applicants believe that no fees are required for the consideration of this Amendment. However, the Commissioner is hereby authorized to charge any fees, which may be required for the consideration of this Amendment, or to otherwise avoid abandonment of this application, to Deposit Account No. 10-0100 (NOKIA.1023US).

Respectfully Submitted,

  
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